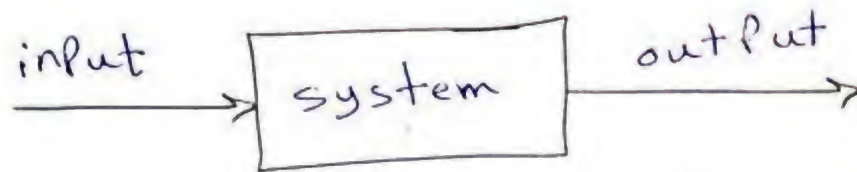


Digital Control

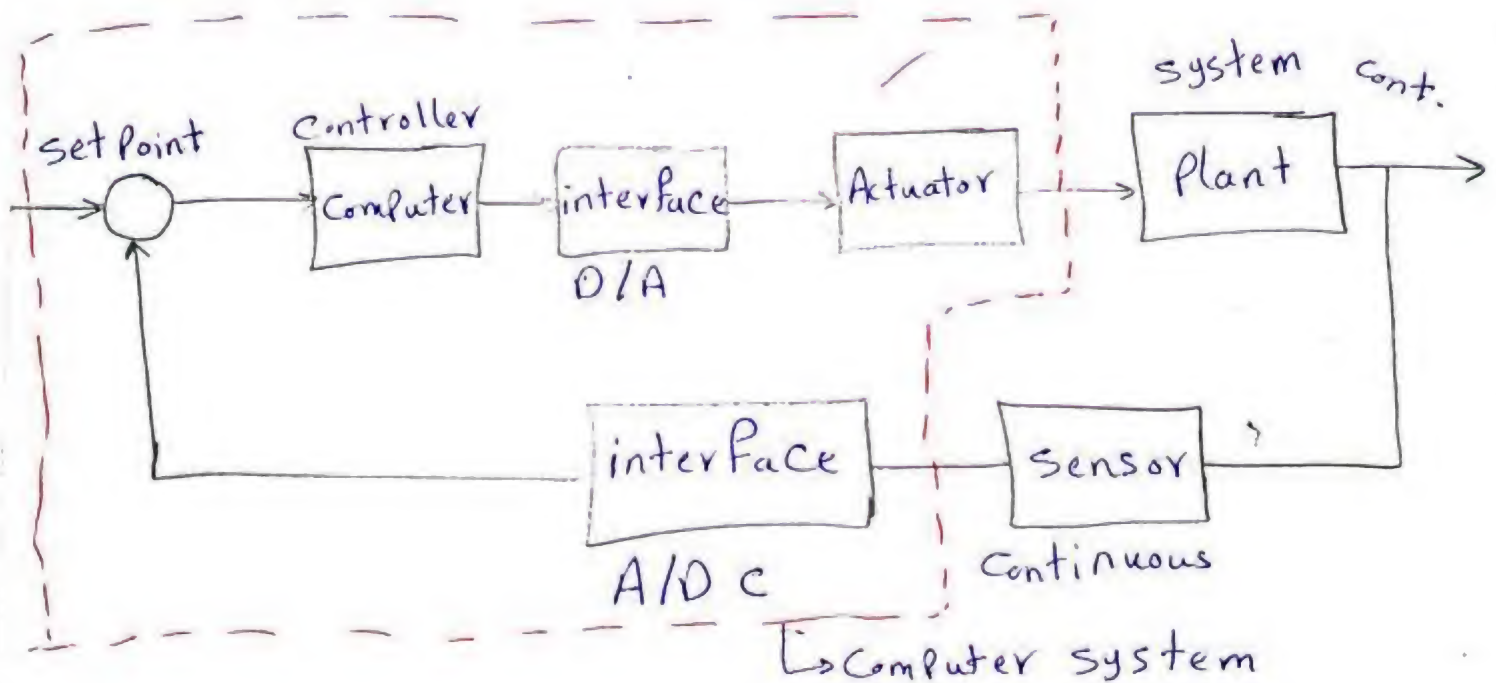
1st session

⇒ Why control?



→ we need to improve system dynamics.

→ all systems are continuous, so we convert it to digital → we study analog first.



→ Control system Phases

1) Modeling

2) Analysis

3) Design

4) Implementation.

Contents of this term

1) Experiments

- * ADC (Hardware)
- * DAC (Hardware)
- * Effect of sampling (Matlab)
- (Hardware)

2) Model Based design:

* Matlab \Rightarrow design controller.

* Arduino (Micro controllers)

Code

Embedded Code
(Matlab - Arduino interface)

3) Signal Conditioning

Input interface
(sensors)

output interface
(Drivers) (H-Bridge)

4) System identification.

5) Course Project \Rightarrow (inverted Pendulum)

optional \rightarrow Mobile Robot.